HOW ROMANIAN FINANCIAL AND INTERNAL AUDITORS ACQUIRE ACCOUNTING INFORMATION SYSTEMS KNOWLEDGE AND COMPETENCES?

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Research theme – in this article we investigate how Romanian financial and internal auditors acquire accounting information systems knowledge and competences and how they use this knowledge to improve their activity in order to fulfill their mission as required by the professional standards.
Objectives – our main purpose is to establish through what type of courses Romanian financial and internal auditors acquiring accounting information systems knowledge and competences and how useful these courses are perceived by the auditors.
Prior work – audit professional organizations prescribed that auditors must acquire, maintain and develop their knowledge and competences. Information technology and information systems are considered to be a main knowledge component of professional development programs. The scientific literature indicates that auditors have to enhance their information systems knowledge in order to cope with the increasing complexity of the client's entities accounting information systems. We consider that our article embraces Curtis et al. (2009) call for research on how auditors obtain information systems knowledge.
Methodology – an electronic questionnaire was created and sent to Romanian financial and internal auditors, which were required to indicate the number of accounting information systems course they attended and how the knowledge gained improved their activity.
Results – We concluded that financial auditors acquire accounting information systems knowledge mainly by attending the courses organized by the Chamber of Financial Auditors of Romanian, while internal auditors by attending the course organized by the companies they are working with.
Implications - The results of this study might be used by Romanian professional audit organizations in reconsidering their priorities regarding the accounting information systems knowledge and competence needs of their constituents.
Originality/Contribution – Our study is the first one to investigate how financial and internal auditors acquire accounting information systems knowledge.

Keywords: accounting information systems, auditors, knowledge

JEL Classification: M42

Introduction

Auditors, both financial and internal, have to acquire and develop their skills and competences in order to be able to fulfill their mission in a professional manner as required by their professional organizations. One of the major, and growing, domains of the skill and competence requirements consists of information technology [IT].
In this respect, The International Federation of Accountants (IFAC) issued the International Education Standard (IES) 8 *Competence Requirements for Audit Professionals* which indicates that the knowledge content of the education and development programs should include information technology (IES8, 2010: par.32). Further, the International Education Practice Statement (IEPS) 2 *Information Technology for Professional Accountants* indicates the IT

knowledge and competence requirements in the pre- and post-qualification stages of candidates and of audit professional. The Institute of Internal Auditors (IIA) issued the *Internal Auditor Competency Framework,* a work-in-progress document which indicates the minimum level of knowledge and skills needed by internal auditors in accordance to their position and experience in the audit function. The framework consists of four so called "buckets", one of which is entitled "Knowledge Areas" and prescribes the level of IT knowledge internal auditors should possess.

Literature review

The issue of what IT skills and competences should an auditor possess have long been debated in the scientific and professional literature. Cutting *et al.* (1971: 76-77) considers that auditors should: understand and analyze the concentration of controls in an electronic environment; understand information systems and understand the use of computer auditing software. The authors also stressed the idea that the knowledge acquired should be differentiated depending on the job requirements and the complexity of tasks. Further, Jancura (1975: 59) extended the knowledge requirements of auditors by considering that they should: have sufficient knowledge of information systems to develop the audit plan. Borthick *et al.* (2006) indicated that "accelerating the acquisition of expertise in auditor's careers is desirable because of increasing demands for audit efficiency and effectiveness, growing sophistication of accounting systems" Borthick *et al.* (2006: 338). The main result of this article is that there is a correlation between structured training and the competences of auditors.

Brazel (2004) suggest that accounting information systems [AIS] expertise is a separate competence domain from that of general audit experience. Such knowledge may affect audit planning judgments and audit quality (Brazel and Agoglia, 2004). The authors indicated that "auditors with higher AIS expertise assessed inherent and control risk as higher than auditors with lower AIS expertise" (Brazel and Agoglia, 2004: 16).

In complex accounting information systems such as Enterprise Resource Planning [ERP] systems, auditors are faced with a greater challenge than in less complex one. Hunton *et al.* (2004) found that auditors are highly confident in their ability to assess risks in ERP systems and less complex systems and they don't indicate a greater need to consult IT specialists or computer assurance specialists in complex environment.

For the internal audit profession and function, Kim *et al.* (2009) indicated several intra-organizational and extra-organizational factors which influence technology acceptance and use. Among these factors the authors identified internal and external training is more influential on technology acceptance for internal auditors as they consider that such knowledge would have a beneficial effect on their job (Kim *et al.* 2009, citing Braun and Davis, 2003).

Curtis *et al.* (2009: 79) presents a review of the existing literature examining auditor's knowledge and training in information systems. The authors covered aspects such as: the environment of information systems in financial reporting and assurance; how financial statements auditors acquire and use information systems knowledge and finally, the interaction between financial statements auditors and information systems auditors. We consider that our article embraces Curtis *et al.* (2009) call for research on how auditors obtain information systems knowledge.

Research questions and methodology

Based on the requirements of the professional standards and the supporting scientific literature, we identified that internal and financial auditors must acquire and develop their information technology and information systems knowledge and competences. Professional organizations require that such knowledge to be acquired by candidate auditors and professional ones to, during development programs. Further, professional auditors are required by their organizations or by the complexity of their client's information systems to expand their competence and knowledge.

For the purpose of this article we intend to investigate how Romanian financial and internal auditors acquire accounting information systems knowledge by attending courses: held by the professional organizations they adhered to, held by the organizations they work with; or from their own initiative. We consider that these forms of training are the most suitable way in which auditors can acquire accounting information systems knowledge and competences. Based on the aim of this article, stated above, we formulated the following research questions.

RQ1: Through what type of courses are Romanian financial and internal auditors acquiring accounting information systems knowledge and competences?
RQ2: How useful these courses are perceived by Romanian financial and internal auditors?

To answer these questions an electronic questionnaire was created and sent to financial auditors, members of the Chamber of Financial Auditors of Romania, and internal auditors, members of the Association of Internal Auditors of Romania. The questionnaire was sent to 1.288 valid e-mail addresses of financial auditors, receiving 97 valid answers (answer rate: 7,53%). To contact the internal auditors, the representative of the Association of Internal Auditors of Romania sent the questionnaire to 567 members and we received 38 valid answers (answer rate: 6,70%) (Cardoş, 2010). Although the answer rate are relatively low, they still allow as to draw our conclusions regarding the way in which auditors attended accounting information courses and the perceived improvement of their activity after attending these courses.
The questionnaire covered several aspects, amongst which we mention: the educational profile and background of auditors, the perceived importance of the accounting information systems impact on their mission and audit opinion, the perceived importance of several IT-related activities an auditor should perform during an audit mission, the perceived influence of ERP systems on the audit opinion.

For the purpose of this article we present the questions inserted in the questionnaire, based on which we try to answer the stated research questions.
How many courses in auditing information systems have you attended in the last three years?
(1) Held by the professional organization of which you are a member of:
(2) Held by the organization/company you are working with:
(3) On your own initiative:

To what extend do you consider that these courses concurred to the improvement of your activity in the audit mission you were participated in?
(1) to a very little extent;
(2) to a little extent;
(3) to some extent;
(4) to a great extent
(5) to a very great extent

Results
Because between the aspects covered by these questions there is a strong correlation we will analyze them in correlation and will focus only on the answers regarding the perceived influence of the accounting information systems courses of those respondents who indicated they participated in at least one course.
We begin our analysis by focusing on the answers provided by financial auditors. We present below (Table 1) a cross-tabulation between the extent to which attending accounting information

systems courses improved the auditors' activity. By this we filter the respondents which answered both questions indicated above.

Table 1: Cross-tabulation (attended courses x improved activity) – financial auditors

Financial auditors		Valid		Missing		Total	
		No.	%	No.	%	No.	%
(1)	Improved activity X courses organized by professional organizations	**61**	62,9%	36	37,1%	97	100,0%
(2)	Improved activity X courses organized by organizations auditors work with	**24**	24,7%	73	75,3%	97	100,0%
(3)	Improved activity X courses attended on own initiative	**19**	19,6%	78	80,4%	97	100,0%

(Source: Cardoş, 2010: 184)

From the Table 1 we can conclude that of the 97 respondents only 61 of them (62,9%) attended professional development courses in accounting information systems organized by the Chamber of Financial Auditors of Romanian, 24 respondents (24,7%) attended accounting information systems courses organized by the organizations they are working with and only 19 of them (19,6%) attended such courses on their own initiative. A first conclusion we can draw is that Romanian financial auditors acquire AIS knowledge and competence primarily from the courses organized by the professional organizations they adhered to. This is not surprising as to fulfill their continuous development program requirements they have to attend several courses at their choice. As many auditors chose to attend AIS courses it's a sign that they are aware of the importance of such knowledge in their work.

In Table 2, presented below, we can observe the extent to which the courses attended by financial auditors improved their activity.

Table 2: The extent to which attending AIS courses improved the financial auditors' activity

Type of courses / Level of improv.	(1)		(2)		(3)	
	No.	%	No.	%	No.	%
to a very little extent	1	1,64	0	0,00	0	0,00
to a little extent	5	8,20	0	0,00	1	5,26
to some extent	19	31,15	3	12,50	2	10,53
to a great extent	25	40,98	14	58,33	9	47,37
to a very great extent	11	18,03	7	29,17	7	36,84
TOTAL	**61**	100,00	**24**	100,00	**19**	100,00

(Source: Cardoş, 2010: 184)

Even though most of the financial auditors attended AIS course organized by the Camber of Financial Auditors of Romania we can observe from Table 2 that they considered the course organized by their organizations or attended on their own initiative to improve to a great or even very great extend their activity during the audit mission they were engaged in. This situation reveals that financial organizations employing financial auditors or financial auditors themselves are more aware of the AIS knowledge needs then the Camber of Financial Auditors of Romania.

We continue our analysis by focusing on the answers provided by internal auditors. We present below (Table 3) a cross-tabulation between the extent to which attending accounting information systems courses improved the auditors' activity. By this we filter the respondents which answered both questions indicated above.

Table 3: Cross-tabulation (attended courses x improved activity) – internal auditors

Internal Auditors	Valid		Valid		Valid	
	No.	No.	No.	No.	No.	No.
Improved activity X courses organized by professional organizations	**14**	36,8%	24	63,2%	38	100,0 %
Improved activity X courses organized by organizations auditors work with	**17**	44,7%	21	55,3%	38	100,0 %
Improved activity X courses attended on own initiative	**21**	55,3%	17	44,7%	38	100,0 %

(Source: Cardoş, 2010: 186)

Based on Table 3 we can conclude that Romanian internal auditors acquire their AIS knowledge mainly from courses attended on their own initiative (55,3%). This might be a consequence of the fact that the Association of Internal Auditors of Romania is a relatively new professional organization in the Romanian audit environment and internal auditors had to rely on the course offered by the organization they were working with or on their own initiative.
Further, in Table 4, we present the extent to which the courses attended by internal auditors contributed to the improvement of their activity.

Table 4: The extent to which attending AIS courses improved the internal auditors' activity

Type of courses / Level of improv.	(1)		(2)		(3)	
	No.	%	No.	%	No.	%
to a very little extent	0	0,00	0	0,00	0	0,00
to a little extent	1	7,14	0	0,00	1	4,76
to some extent	2	14,29	6	35,29	7	33,33
to a great extent	7	50,00	7	41,18	6	28,57
to a very great extent	4	28,57	4	23,53	7	33,33
TOTAL	**14**	100,00	**17**	100,00	**21**	100,00

(Source: Cardoş, 2010: 186)

In the case of internal auditors we can observe that they consider the AIS courses organized by their professional organization as improving their activity to a great and even very great extent. This suggests that the Association of Internal Auditors of Romania gives a greater importance to AIS knowledge and competences that an internal auditor should possess. Still, the AIS courses offered by organizations employing internal auditors or the internal auditors themselves influenced to at least some extent the improvement of the auditors' activity during their mission.

Conclusions

Regarding the first research question stated, we conclude that Romanian financial and internal auditors are acquiring AIS knowledge and competences needed to perform their mission in a professional manner in a differentiated way. Financial auditors gain such knowledge by attending AIS courses organized by their professional organizations, while internal auditors by attending such courses on their own initiative.

As for the second research question we have to differentiate again between financial and internal auditors. The first group of audit professionals indicated that the courses organized by the organizations they work with contributed to a great or very great extent to the improvement of their activity, followed by the courses attended on their own initiative. In the case of internal auditors, the courses organized by the professional organizations they are members of, proved to influence to a great or even very great extent the improvement of their activity followed by the courses organized by the organizations they are working with.

A limitation to this study might be posed by the fact that the answer rate to the questionnaire was relatively low and that we included in our study only the internal auditors members of the Association of Internal Auditors of Romania, neglecting the internal auditors adhered to the Central Harmonization Unit for Public Internal Audit.

We consider that the results of this study might be used by Romanian professional audit organizations in reconsidering their priorities regarding the accounting information systems knowledge and competence needs of their constituents.

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